This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims: Please amend the claims as follows:

We claim:

Claim 1. (Currently Amended) A method for the diagnosis of, or prognosis of a treatment of, a disorder with an HDAC inhibitor comprising

(a) contacting a sample obtained from a tissue affected by the disorder with a monoclonal antibody which is

(1) monoclonal antibody T25 which is obtainable from the cell line G2M-T25-H4ac deposited at DSMZ; or

(2) monoclonal antibody T52 which is obtainable from the cell line G2M-T52-ac deposited at DSMZ;

wherein each of said T25 or T52 monoclonal antibody is capable of binding to acetylated histone but not to deacetylated histone; and

(b) determining the level of histone acetylation in the sample with said T25 or said T52 antibody; wherein lowered level of histone acetylation in said sample compared to that of a reference sample is indicative that said disorder is treatable with said HDAC inhibitor.

Claim 2. (Cancelled)

Claim 3. (Cancelled)

Claim 4. (Previously Presented) A method according to claim 1 wherein the antibody is the antibody T25 which is obtainable from the cell line G2M-T25-H4ac deposited at DSMZ.

Claim 5. (Previously Presented) A method according to claim 1 wherein the antibody is the antibody T52 which is obtainable from the cell line G2M-T52-ac deposited at DSMZ.

Claim 6. (Previously Presented) A method according to Claim 1 wherein the disorder is

a tumor disease wherein induction of hyperacetylation of histones has a beneficial effect resulting in differentiation and/or apoptosis of a patient's tumor cells,

a disease that show aberrant recruitment of HDAC activity,

a condition associated with abnormal gene expression,

an autoimmune disease, or

a proliferative disease.

Claim 7. (Previously Presented) A method according to claim 6 wherein the disorder is skin cancer, melanoma, estrogen receptor-dependent and independent breast cancer, ovarian cancer, testosterone receptor-dependent and independent prostate cancer, renal cancer, colon and colorectal cancer, pancreatic cancer, bladder cancer, esophageal cancer, stomach cancer, genitourinary cancer, gastrointestinal cancer, uterine cancer, astrocytomas, gliomas, basal cancer and squameous cell carcinoma, sarcomas as Kaposi's sarcoma and osteosarcoma, head and neck cancer, small cell and non-small cell lung carcinoma, leukemia, lymphomas and other blood cell cancers, or thyroid resistance syndrome.

Claim 8. (Previously Presented) A method according to Claim 1 wherein in step (b) the level of histone acetylation in the sample is determined by flow cytometry, immunohistochemistry, ELISA or Western Blotting.

Claim 9. (Currently Amended) A method according to Claim 1 wherein the reference sample is a sample obtained from a tissue from a healthy individual that corresponds to the tissue affected by the disorder and said method comprises processing the reference sample according to steps (a) and (b).

Claim 10. (Currently Amended) A method according to Claim 1 wherein the reference sample is a ~~further~~ sample obtained from tissue affected by the disorder which has been contacted with an HDAC inhibitor and said method comprises processing the reference sample according to steps (a) and (b).

Claim 11. (Currently Amended) A method for the classification of a tumor comprising

(a) contacting a sample obtained from a tissue affected by the tumor with a monoclonal antibody which is

(1) monoclonal antibody T25 which is obtainable from the cell line G2M-T25-H4ac deposited at DSMZ,

(2) monoclonal antibody T52 which is obtainable from the cell line G2M-T52-ac deposited at DSMZ; or

(3) a conjugate of (1) or (2);

wherein each of said T25 or T52 monoclonal antibody is capable of binding to acetylated histone

but not to deacetylated histone; and

(b) determining the level of histone acetylation in the sample with said T25 or said T52 antibody; wherein lowered level of histone acetylation in said sample compared to that of a reference sample is indicative that said tumor is treatable with ~~said~~ an HDAC inhibitor.

Claim 12. (Withdrawn) An antibody capable of binding to peptides having the sequence as shown in SEQ ID NO:4 and SEQ ID NO:5 but not to anyone of the peptides having the sequences as shown in SEQ ID NO:6, SEQ ID NO:2, SEQ ID NO:10 and SEQ ID NO:11.

Claim 13. (Withdrawn) An antibody capable of binding to peptides having the sequence as shown in SEQ ID NO:4 and SEQ ID NO:5 and SEQ ID NO:6 but not to peptides having the sequence as shown in SEQ ID NO:2.

Claim 14. (Withdrawn) An antibody produced by a hybridoma cell line selected from hybridoma cell lines G2M-T25-H4ac and G2M-T52-ac deposited at DSMZ.

Claim 15. (Withdrawn) A hybridoma cell line producing an antibody according to claim 12.

Claim 16. (Withdrawn) A hybridoma cell line which has the identifying characteristics of the cell line G2M-T25-H4ac deposited at DSMZ.

Claim 17. (Withdrawn) A hybridoma cell line which has the identifying characteristics of the cell line G2M-T52-ac deposited at DSMZ.

Claim 18. (Withdrawn) A diagnostic kit for determining the level of histone acetylation containing

(i) an antibody capable of binding to acetylated histone but not to deacetylated histone; (ii) an HDAC inhibitor; and optionally

(iii) a secondary antibody directed against the antibody of step (i); and optionally

(iv) reagents for the measurement of a signal derived from an antibody binding to acetylated histones.

Claim 19. (Withdrawn) A diagnostic kit according to claim 19 wherein the antibody is the monoclonal antibody termed T25 or the monoclonal antibody termed T52.

Claim 20. (Cancelled)

Claim 21. (Previously Presented) The method according to claim 11 wherein the conjugate comprises a radioactive compound.

Claim 22. (Previously Presented) The method according to claim 11 wherein the conjugate comprises a chemotherapeutic or cytotoxic agent.

Claim 23. (Previously Presented) The method according to claim 11 wherein the conjugate is released by proteolytic cleavage.